

WHAT IS CLAIMED IS:

1. A method for measuring fluid retention or loss of a patient,  
comprising the steps of:  
5 weighing fluid introduced into the patient to produce a fluid-in amount;  
weighing fluid collected from the patient to produce a fluid-out amount;  
and  
calculating a difference between the fluid-in amount and the fluid-out  
amount, the difference representing the fluid retention or loss of the patient.  
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2. The method of claim 1, further comprising the step of inputting a  
specific gravity of a fluid.
3. The method of claim 2, wherein the fluid-in amount is a volume  
15 calculated by dividing a weight of fluid introduced into the patient by the specific  
gravity of the fluid.
4. The method of claim 2, wherein the fluid-out amount is a volume  
20 calculated by dividing a weight of fluid collected from the patient by the specific  
gravity of the fluid.
5. The method of claim 1, further comprising the step of inputting a  
threshold fluid amount.
- 25 6. The method of claim 5, further comprising the step of monitoring  
the difference to determine if the difference crosses the threshold fluid amount.
7. The method of claim 5, further comprising the step of alerting a  
user when the difference crosses the threshold fluid amount.

8. The method of claim 7, wherein the user is alerted by audible and visual signals.

9. The method of claim 1, further comprising the steps of:  
5 storing fluid in an inflow container such that the inflow container supplies the fluid introduced into the patient; and  
automatically detecting if the inflow container is replaced.

10. The method of claim 9, further comprising the step of resetting a  
10 baseline weight of the inflow container if the inflow container is replaced.

11. The method of claim 1, further comprising the steps of:  
storing fluid in an outflow container such that the outflow container  
15 receives the fluid collected from the patient; and  
automatically detecting if the outflow container is replaced.

12. The method of claim 9, further comprising the step of resetting a  
baseline weight of the outflow container if the outflow container is replaced.

13. The method of claim 1, further comprising the step of displaying  
20 the fluid-in amount, the fluid-out amount, and the difference representing the fluid retention or loss of the patient on a display device.

14. A device for measuring fluid retention or loss of a patient,  
25 comprising:  
a first weighing device that weighs fluid introduced into the patient to produce a fluid-in weight;  
a second weighing device that weighs fluid collected from the patient to produce a fluid-out weight;  
30 a processor, coupled to the first and second weighing devices, that calculates fluid retention or loss of the patient according to the fluid-in and fluid-out

weights; and a display device, coupled to the processor, that displays the fluid retention or loss of the patient.

15. The device of claim 14, further comprising a visual alarm that  
5 indicates if the fluid difference exceeds a threshold.

16. The device of claim 14, further comprising an audible alarm that indicates if the fluid difference exceeds a threshold.

10 17. The device of claim 14, further comprising keys for receiving operator input.

18. The device of claim 17, wherein the specific gravity of the fluid is input using the keys.  
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19. A device for measuring fluid retention or loss of a patient, comprising:

a first weighing device that weighs fluid introduced into the patient to produce a fluid-in weight;

20 a second weighing device that weighs fluid collected from the patient to produce a fluid-out weight;

a processor, coupled to the first and second weighing devices, that calculates a fluid-in volume from the fluid-in weight, a fluid-out volume from the fluid-out weight and a fluid difference between the fluid-in volume and the  
25 fluid-out volume; and

a display device, coupled to the processor, that displays the fluid-in volume, fluid-out volume, and the fluid difference.

20. The device of claim 19, further comprising a visual alarm that  
30 indicates if the fluid difference exceeds a threshold.

21. The device of claim 19, further comprising an audible alarm that indicates if the fluid difference exceeds a threshold.

22. The device of claim 19, further comprising keys for receiving  
5 operator input.

23. The device of claim 22, wherein the specific gravity of the fluid is input using the keys.

10 24. A method for measuring fluid retention or loss of a patient, comprising the steps of:  
storing fluid in an inflow container such that the inflow container supplies fluid introduced into the patient;  
weighing fluid in the inflow container to produce a fluid-in amount;  
15 storing fluid in an outflow container such that the outflow container receives fluid collected from the patient;  
weighing fluid in the outflow container to produce a fluid-out amount;  
automatically detecting if an inflow or outflow container is replaced; and  
calculating a difference between the fluid-in amount and the fluid-out  
20 amount, the difference representing the fluid retention or loss of the patient.

25 25. The method of claim 24, wherein the automatically detecting step comprises the step of detecting if a weight of an inflow or outflow container is zero, indicating that the inflow or outflow container has been removed.

26. The method of claim 25, further comprising the step of signaling a user when the inflow or outflow container has been removed.

27. The method of claim 24, wherein the automatically detecting stop  
30 comprises the step of detecting if a weight of an inflow or outflow container increases after being zero, indicating that the inflow or outflow container has been replaced.

28. The method of claim 27, further comprising the step of signaling a user when the inflow or outflow container has been replaced.

5 29. The method of claim 24, further comprising the step of resetting a baseline weight of the replaced container.

30. A device for measuring fluid retention or loss of a patient, comprising:

10 a first weighing device that weighs fluid in an inflow container to produce a fluid-in weight, the inflow container supplying fluid introduced into the patient;

a second weighing device that weighs fluid in an outflow container to produce a fluid-out weight, the outflow container collecting fluid from the patient;

15 a processor, coupled to the first and second weighing devices, that calculates fluid retention or loss of the patient according to the fluid-in and fluid-out weights, the processor automatically detecting if an inflow or outflow container is replaced; and

a display device, coupled to the processor, that displays the fluid retention or loss of the patient.

20 31. The device of claim 30, wherein the processor automatically detects if a weight of an inflow or outflow container is zero, indicating that the inflow or outflow container has been removed.

25 32. The device of claim 31, wherein the processor signals a user when the inflow or outflow container has been removed.

30 33. The device of claim 30, wherein the processor automatically detects if a weight of an inflow or outflow container increases after being zero, indicating that the inflow or outflow container has been replaced.

34. The device of Claim 33, wherein the processor signals a user when the inflow or outflow container has been replaced.

5 35. The device of claim 30, wherein the processor resets a baseline weight of the replaced container.

36. A system for fluid management of a patient, comprising:  
a first inflow container for storing fluid introduced into the patient;  
a pump coupled to the first inflow container for assisting fluid from the  
10 first inflow container into the patient; and  
an outflow container for storing fluid collected from the patient.

37. The system of claim 36, wherein the pump pumps fluid directly into the patient.

38. The system of claim 36, further comprising a second inflow container, wherein the pump pumps fluid into the second inflow container and fluid flows from the second inflow container with gravity.

20 39. The system of claim 36, further comprising:  
a first weighing device that weighs fluid in the first inflow container; and  
a second weighing device that weighs fluid in the outflow container.

25 40. The system of Claim 39, further comprising a fluid monitor coupled to the first and second weighing devices that calculates and displays a fluid retention or loss of the patient.

41. The system of claim 40, wherein the fluid monitor alerts a user if the fluid retention or loss of the patient crosses a threshold.